

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:	Zhiqiang WANG et al.	§	Confirmation No.:	9275
Serial No.:	10/667,313	§	Group Art Unit:	2454
Filed:	09/23/2003	§	Examiner:	Jeong S. Park
For:	Techniques for Resolving Network Connectivity	§	Docket No.:	200309072-1

**APPEAL BRIEF**

**Mail Stop Appeal Brief – Patents**  
Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Date: June 8, 2009

Sir:

Appellants hereby submit this Appeal Brief in connection with the above-identified application. A Notice of Appeal was electronically filed on April 6, 2009.

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Appeal Brief dated June 8, 2009  
Reply to final Office action of February 4, 2009**

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**I. REAL PARTY IN INTEREST**

The real party in interest is Hewlett-Packard Development Company, L.P. (HPDC), a Texas Limited Partnership, having its principal place of business in Houston, Texas. HPDC is a wholly owned affiliate of Hewlett-Packard Company (HPC). The Assignment from the inventors to HPDC was recorded on October 15, 2003, at Reel/Frame 014052/0315.

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**II. RELATED APPEALS AND INTERFERENCES**

Appellants are unaware of any related appeals or interferences.

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**III. STATUS OF THE CLAIMS**

The status of the claims is as follows:

Originally filed claims:	1-26.
Claim cancellations:	28.
Added claims:	27-30.
Presently pending claims:	1-27, 29 and 30.
Presently appealed claims:	1-27, 29 and 30.

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**IV. STATUS OF THE AMENDMENTS**

No claims were amended after the final Office action dated February 4, 2009.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

The following provides a concise explanation of the subject matter defined in each of the claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 CFR § 41.37(c)(1)(v). Each element of the claims is identified with a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

It is desirable to implement a system and method for decreasing the significant latency which can be associated with transferring data packets using routers in a large network, while still preserving the ability of network management software to accurately resolve connectivity of devices within the network.

Claim 1 recites a method for resolving network connectivity comprising determining whether a first device is included in a portion of a network in which that first device is able to receive information that is directed to all devices included within the portion of the network (Figure 1 – 102; p. 4, ¶13-21; ¶14). The method also comprises obtaining a first identifier that is associated with the portion of the network (Figure 1 – 104; p. 4, ¶22 – p. 5, ¶12; ¶15-16), assigning a second identifier to the portion of the network based on a domain identifier unique to other portions of the network (Figure 1 – 106; p. 5, ¶13-21; ¶17), and modifying the first identifier that is associated with the portion of the network to include the second identifier (Figure 1 – 108; p. 5, ¶22 – p. 6, ¶4; ¶18). The method continues with the first device and the portion of the network being associated with the modified first identifier (Figure 1 – 110; p. 6, ¶5-14; ¶19-20).

Claim 10 recites a system for resolving network connectivity that comprises a memory (Figure 2 – 202; p. 8, ¶9; ¶25) and a processor (Figure 2 – 204; p. 8, ¶9; ¶25). The processor includes logic configured to determine, using data stored in the memory, whether a first device is included in a portion of a network in which the first device is able to receive information that is directed to

all devices included within the portion of the network (p. 8, ¶9-17; ¶25). Additionally, the processor includes logic configured to obtain from the memory a first identifier associated with the portion of the network (p. 8, ¶18-19; ¶26), logic configured to assign a second identifier to the portion of the network based on a domain identifier unique to other portions of the network (p. 9, ¶3-4; ¶27), and logic configured to modify the first identifier associated with the portion of the network to include the second identifier (p. 9, ¶14-15; ¶28). Furthermore, the processor includes logic configured to associate the modified first identifier with the first device and the portion of the network (p. 9, ¶22-23; ¶29).

Claim 21 recites a computer readable storage medium (p. 12, ¶14 – p. 13, ¶6; ¶36-37) which stores a computer program for resolving network connectivity. The computer program comprises executable instructions for determining whether a first device is included in a portion of a network in which that first device is able to receive information that is directed to all devices included within the portion of the network (Figure 1 – 102; p. 4, ¶13-21; ¶14). The computer program also comprises executable instructions for obtaining a first identifier that is associated with the portion of the network (Figure 1 – 104; p. 4, ¶22 – p. 5, ¶12; ¶15-16), assigning a second identifier to the portion of the network based on a domain identifier unique to other portions of the network (Figure 1 – 106; p. 5, ¶13-21; ¶17), and modifying the first identifier that is associated with the portion of the network to include the second identifier (Figure 1 – 108; p. 5, ¶22 – p. 6, ¶4; ¶18). Additionally, the computer program comprises executable instructions for associating the modified first identifier with the first device and the portion of the network (Figure 1 – 110; p. 6, ¶5-14; ¶19-20).

Claim 27 recites a system for resolving network connectivity that comprises a means for determining a first identifier associated with a portion of a network in which a device is able to receive information directed to all devices included within the portion of the network. This element is a means plus function element. Structure for this element is at least a processor containing logic configured to obtain information stored in memory which may be found in the specification at least at (Figure 2 – 204; p. 8, ¶9 – p. 9, ¶2; ¶25-26). The system

also comprises means for determining a second identifier associated with the portion of the network based on a domain identifier unique to other portions of the network. This element is a means plus function element. Structure for this element is at least a processor containing logic which may be found in the specification at least at (Figure 2 – 204; p. 9, ¶3-13; ¶27). Additionally, the system comprises means for associating the first and second identifiers with the device and the portion of the network. This element is a means plus function element. Structure for this element is at least a processor containing logic which may be found in the specification at least at (Figure 2 – 204; p. 9, ¶22 – p. 10, ¶4; ¶29). The means for associating comprises means for modifying the first identifier associated with the portion of the network to include the second identifier. This element is a means plus function element. Structure for this element is at least a processor containing logic which may be found in the specification at least at (Figure 2 – 204; p. 9, ¶14-21; ¶28).

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**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Appellants seek review of the following grounds of rejection:

1. Whether claims 1-5, 8-11, 13, 14, 17-24, 27, 29 and 30 are obvious under 35 U.S.C. § 103(a) over U.S. Pat. No. 5,959,989 ("Gleeson") in view U.S. Pub. No. 2004/0078469 ("Ishwar") and further in view of U.S. Pub. No. 2004/0133634 ("Luke").
2. Whether claims 6, 7, 15, 16, 25 and 26 are obvious under 35 U.S.C. § 103(a) over Gleeson in view of Ishwar and Luke and further in view of U.S. Pat. No. 6,269,076 ("Shamir").
3. Whether claim 12 is obvious under 35 U.S.C. § 103(a) over Gleeson in view of Ishwar and Luke and further in view of U.S. Pat. No. 6,026,442 ("Lewis").

## VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellants present separate arguments for various independent and dependent claims. After a concise discussion of cited art, each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 CFR § 41.37(c)(1)(vii).

## A. Overview of Gleeson

As shown in Figure 2A below, Gleeson discloses intermediate devices 220-223 “capable of establishing segmented virtual local area networks (VLANs) by associating various groups of LANs 204-214.” (Col. 8, ¶4-6).

## Gleeson – Figure 2A

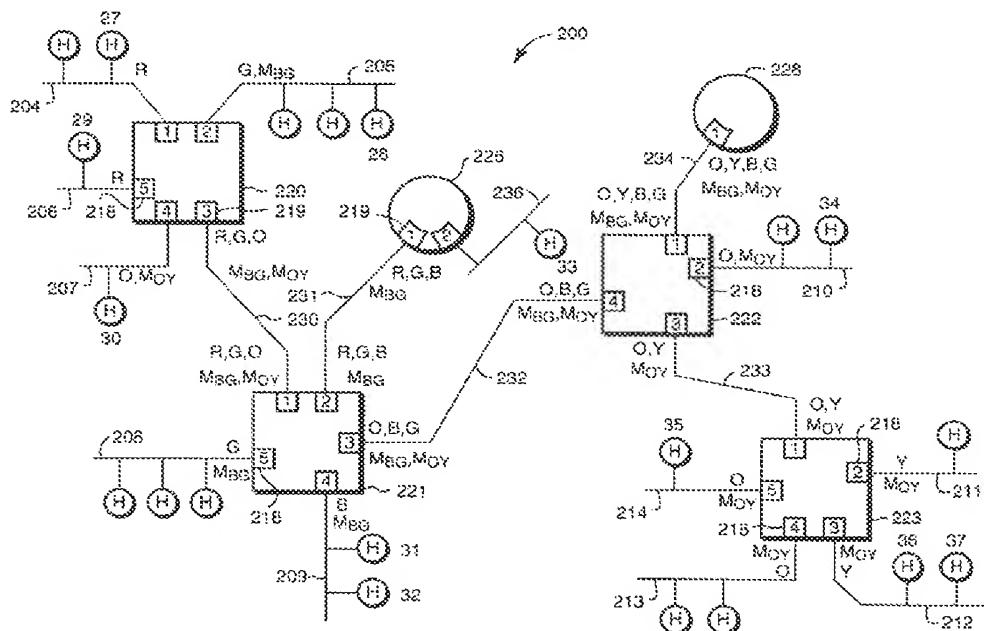


FIG. 2A

Each port of these intermediate devices may be associated with at least one VLAN designation. (Col. 8, ¶7-11). Thus, each LAN coupled to a port is “associated with the corresponding VLAN designation.” (Col. 8, ¶11-13). This enables multiple LANs to comprise a VLAN. (Col. 8, ¶13-18).

## B. Overview of Ishwar

Ishwar describes the establishment of customer-specific broadcast domains “by associating ports in [a] multiport network node with customer-specific VLAN IDs.” (Para. [0026]).

**Ishwar – Figure 2**

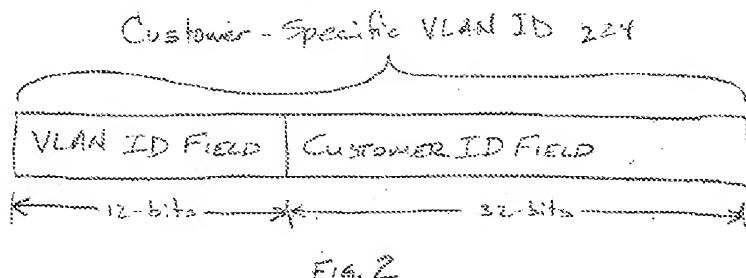


Fig. 2

Figure 2, as shown above, depicts an example of a customer-specific VLAN ID. According to Ishwar, the VLAN ID is “a combination of a 12-bit VLAN ID field and a 32-bit customer ID field.” (Para. [0025]).

## C. Obviousness Rejections of Claims 1-5, 8-11, 13, 14, 17-24, 27, 29 and 30 Over Gleeson in View of Ishwar and Luke

Claims 1-5, 8-11, 13, 14, 17-24, 27, 29, and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gleeson in view of Ishwar and further in view of Luke. Appellants respectfully traverse this rejection because the cited art does not establish *prima facie* obviousness.

Any rejection under 35 U.S.C. § 103 must clearly and explicitly articulate the reasons why the claimed invention would have been obvious. MPEP § 2142. The framework for determining obviousness under 35 U.S.C. § 103 requires (1) a determination of the scope and content of the prior art; (2) an assessment of the differences between the claimed invention and the prior art; and (3) an assessment of the level of ordinary skill in the pertinent art. MPEP § 2141 (citing *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 167 L.Ed.2d 705, 82 USPQ2d 1385, 1395-97 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966)). According to MPEP § 2141, ascertaining the differences between the *claimed invention* and the prior art requires *interpreting the claim language*. Thus, differences between the claim limitations and the prior art weighs in favor of

non-obviousness. For instance, to establish obviousness, each of the claimed limitations must be taught or suggested by the prior art. See *CFMT, Inc. v. YieldUp Int'l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). In addition, “[i]f an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious.” MPEP § 2143.03 (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Independent claim 1 recites in part, “assigning a second identifier to the portion of the network *based on* a domain identifier *unique* to other portions of the network.” In the Final Office Action, the Examiner cites to Gleeson as teaching a second identifier being assigned to the portion of the network *unique* to other portions of the network. (FOA dated 2/4/09, p. 3, ¶8-10). The Examiner admits that neither Gleeson nor Ishwar teach or suggest a second identifier *based on* a domain identifier. (*Id.* at p. 4, ¶7-8). However, the Examiner cites to Luke as teaching this limitation. (*Id.* at p. 4, ¶9-11). With respect, Appellants disagree.

Specifically, the Examiner points to col. 8, ¶4-18 and Figure 2A of Gleeson for teaching a second identifier being assigned to the portion of the network *unique* to other portions of the network. Claim 1 requires that a second identifier be assigned to the portion of the network *based on* a domain identifier that is *unique* to other portions of the network. However, the cited portion of Gleeson merely discloses intermediate devices “capable of establishing segmented virtual local area networks (VLANs) by associating various groups of LANs.” (Gleeson - Col. 8, ¶4-6). Nowhere does Gleeson contemplate assigning a second identifier to the VLAN *based on* a domain identifier that is *unique* to other portions of the network. Rather, Gleeson merely discloses VLAN associations that can have the same designation. (Gleeson - Col. 8, ¶14-16). As the Examiner admits, Gleeson does not contemplate assigning any possible second identifier *based on* a domain identifier. Hence, Gleeson cannot teach or suggest the domain identifier being *unique* to other portions of the network.

Ishwar discloses a customer specific VLAN that is identified by a combination of VLAN ID and customer ID. (Ishwar – para. [0026]). However,

Ishwar does not teach or suggest assigning a second identifier *based on* anything, let alone, a domain identifier that is *unique* to other portions of the network, and thus, does not cure the deficiencies of Gleeson.

Likewise, Luke fails to cure the deficiencies of Gleeson and Ishwar. Luke merely discloses assigning a VLAN ID to a VLAN that is associated with a virtual domain. (Luke – para. [0469]). Thus, Luke does not teach or suggest assigning a second identifier *based on* a domain identifier from any other part of the network, let alone, *based on* a domain identifier that is *unique* to other portions of the network. Because Gleeson, Ishwar, and Luke fail to teach or suggest, alone or in combination, the assigning of a second identifier to the portion of the network *based on* a domain identifier that is *unique* to other portions of the network as required by claim 1, claim 1 and all claims dependent thereon, 2-9, are allowable over Gleeson in view of Ishwar and further in view of Luke. Thus, Appellants respectfully contend that the Examiner erred in rejecting claim 1 and its dependent claims 2-9 over Gleeson in view of Ishwar and further in view of Luke.

Claim 1 also requires: “*modifying* the first identifier associated with the portion of the network to include the second identifier.” The Examiner cites to Ishwar as teaching this limitation. (FOA dated 2/4/09, p. 3, ¶18-21). Ishwar fails to teach or suggest *modifying* anything, let alone the first identifier. As noted above, the cited section of Ishwar merely discloses a customer specific VLAN that is identified by a combination of VLAN ID and customer ID. (Ishwar – para. [0026]). The VLAN ID is not *modified* nor is any other identifier *modified*. Hence, Ishwar does not teach or suggest *modifying* the first identifier to include the second identifier as required by claim 1. Neither Gleeson nor Luke contemplate the *modification* of the first identifier to include the second identifier, and are thus, also deficient in this regard. For at least this additional reason, Appellants respectfully contend that the Examiner erred in rejecting claim 1 and its dependent claims 2-9 over Gleeson in view of Ishwar and further in view of Luke.

Claim 10 recites in part, “logic configured to assign a second identifier to the portion of the network based on a domain identifier unique to other portions of the network” and “logic configured to modify the first identifier with the portion of

the network to include the second identifier.” These limitations are similar to the limitations discussed above under claim 1. Thus, Appellants respectfully contend that the Examiner erred in rejecting claim 10, along with its dependent claims 11-20, over Gleeson in view of Ishwar and further in view of Luke, for at least the same reasons as claim 1.

Claim 21 recites in part, “assigning a second identifier to the portion of the network based on a domain identifier unique to other portions of the network” and “modifying the first identifier with the portion of the network to include the second identifier.” These limitations are similar to the limitations discussed above under claim 1. Thus, Appellants respectfully contend that the Examiner erred in rejecting claim 21, along with its dependent claims 22-26, over Gleeson in view of Ishwar and further in view of Luke, for at least the same reasons as claim 1.

Claim 27 recites in part, “means for determining a second identifier associated with the portion of the network based on a domain identifier unique to other portions of the network” and “wherein the means for associating comprises means for modifying the first identifier associated with the portion of the network to include the second identifier.” These limitations are similar to the limitations discussed above under claim 1. Thus, Appellants respectfully contend that the Examiner erred in rejecting claim 27, along with its dependent claims 29-30, over Gleeson in view of Ishwar and further in view of Luke, for at least the same reasons as claim 1.

**D. Obviousness Rejections of Claims 6, 7, 15, 16, 25 and 26  
Over Gleeson in View of Ishwar, Luke, and Shamir**

Claims 6, 7, 15, 16, 25, and 26 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Gleeson in view of Ishwar and Luke and further in view of Shamir. Claims 6 and 7 depend from claim 1. Claims 15 and 16 depend from claim 10. Claims 25 and 26 depend from claim 21. “If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.” MPEP § 2143.03 (2007) (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). As discussed in VII(C), independent claims 1, 10, and 21 are nonobvious and allowable over Gleeson in view of Ishwar and

further in view of Luke. Shamir discloses a network management system using a management information base (Shamir – Col. 8, ¶9-10); however, Shamir fails to disclose assigning a second identifier to the portion of the network based on a domain identifier unique to other portions of the network and modifying the first identifier associated with the portion of the network to include the second identifier. Thus, Shamir does not cure the deficiencies of Gleeson, Ishwar, and Luke with respect to claims 1, 10, and 21. Hence, claims 6, 7, 15, 16, 25, and 26 are also nonobvious. For at least this reason, claims 6, 7, 15, 16, 25, and 26 are allowable over the cited art.

**E. Obviousness Rejections of Claim 12 Over Gleeson in View of Ishwar Luke, and Lewis**

Claim 12 stands rejected under 35 U.S.C § 103(a) as being unpatentable over Gleeson in view of Ishwar and Luke and further in view of Lewis. Claim 12 depends from claim 10. “If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.” MPEP § 2143.03 (2007) (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). As discussed in VII(C), independent claim 10 is nonobvious and allowable over Gleeson in view of Ishwar and further in view of Luke. Lewis discloses a display unit connected to a processor for graphics display (Lewis – Col. 4, ¶17-20); however, Lewis fails to disclose assigning a second identifier to the portion of the network based on a domain identifier unique to other portions of the network and modifying the first identifier associated with the portion of the network to include the second identifier. Thus, Lewis does not cure the deficiencies of Gleeson, Ishwar, and Luke with respect to claim 10. Hence, claim 12 is also nonobvious. For at least this reason, claim 12 is allowable over the cited art.

**F. Conclusion**

For the reasons stated above, Appellants respectfully submit that the rejections should be reversed. Appellants believe that they have complied with each requirement for an appeal brief. If any member of the Board of Appeals has any questions or otherwise feels it would be advantageous, he or she is encouraged to telephone the undersigned at (713) 238-8000.

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In the course of the foregoing discussions, Appellants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims.

It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,

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**VIII. CLAIMS APPENDIX**

1. (Previously presented) A method for resolving network connectivity, the method comprising:

    determining whether a first device is included in a portion of a network in which the first device can receive information directed to all devices included within the portion of the network;

    obtaining a first identifier associated with the portion of the network;

    assigning a second identifier to the portion of the network based on a domain identifier unique to other portions of the network;

    modifying the first identifier associated with the portion of the network to include the second identifier; and

    associating the modified first identifier with the first device and the portion of the network.

2. (Original) The method of claim 1, comprising:

    identifying a second device included in the portion of the network; and

    associating the modified first identifier with the second device.

3. (Original) The method of claim 1, comprising:

    presenting a first symbol identifying the first device, connected to a second symbol identifying the portion of the network using the modified first identifier.

4. (Original) The method of claim 1, wherein the portion of the network is a broadcast domain.

5. (Previously presented) The method of claim 1, wherein the portion of the network is a Virtual Local Area Network (VLAN).

6. (Original) The method of claim 5, wherein the first device is a network switch including a Management Information Sase (MIS) configured to store an identifier of the VLAN.

7. (Original) The method of claim 6, wherein obtaining the first identifier associated with the portion of the network comprises:

using a Simple Network Management Protocol (SNMP) query to obtain the identifier of the VLAN from the MIS as the first identifier.

8. (Original) The method of claim 1, wherein the first device is a port included in a network switch.

9. (Original) The method of claim 1, wherein the first device is coupled to other portions of the network by a network router.

10. (Previously presented) A system for resolving network connectivity, the system comprising:

a memory; and

a processor, including:

logic configured to determine, using data stored in the memory, whether a first device is included in a portion of a network in which the first device can receive information directed to all devices included within the portion of the network;

logic configured to obtain, from the memory, a first identifier associated with the portion of the network;

logic configured to assign a second identifier to the portion of the network based on a domain identifier unique to other portions of the network;

logic configured to modify the first identifier associated with the portion of the network to include the second identifier; and

logic configured to associate the modified first identifier with the first device and the portion of the network.

11. (Previously presented) The system of claim 10, wherein the processor comprises:

logic configured to identify, using the data stored in the memory, a second device included in the portion of the network; and

logic configured to associate the modified first identifier with the second device.

12. (Original) The system of claim 10, comprising:

a display;

wherein the processor comprises logic configured to present on the display a first symbol identifying the first device, connected to a second symbol identifying the portion of the network using the modified first identifier.

13. (Original) The system of claim 10, wherein the portion of the network is a broadcast domain.

14. (Original) The system of claim 10, wherein the portion of the network is a Virtual Local Area Network (VLAN).

15. (Original) The system of claim 14, wherein the first device is a network switch including a Management Information Base (MIB) as a portion of the memory, the MIS being configured to store an identifier of the VLAN.

16. (Original) The system of claim 15, wherein obtaining the first identifier associated with the portion of the network comprises:

using a Simple Network Management Protocol (SNMP) query to obtain the identifier of the VLAN from the MIS as the first identifier.

17. (Previously presented) The system of claim 15, wherein the data stored in the memory used in determining whether the first device is included in the portion

of the network includes a first table having an entry associating an identifier of the network switch with the identifier of the VLAN.

18. (Original) The system of claim 15, wherein the memory includes a second table having an entry associating an identifier of the network switch with the second identifier.

19. (Original) The system of claim 10, wherein the first device is a port included in a network switch.

20. (Original) The system of claim 10, wherein the first device is coupled to other portions of the network by a network router.

21. (Previously presented) A computer readable storage medium storing therein a computer program for resolving network connectivity, wherein the computer program comprises executable instructions for:

determining whether a first device is included in a portion of a network in which the first device can receive information directed to all devices included within the portion of the network;

obtaining a first identifier associated with the portion of the network;

assigning a second identifier to the portion of the network based on a domain identifier unique to other portions of the network;

modifying the first identifier associated with the portion of the network to include the second identifier; and

associating the modified first identifier with the first device and the portion of the network.

22. (Previously presented) The computer readable storage medium of claim 21, wherein the computer program comprises executable instructions for:

identifying a second device included in the portion of the network; and

associating the modified first identifier with the second device.

23. (Previously presented) The computer readable storage medium of claim 21, wherein the computer program comprises executable instructions for:

presenting a first symbol identifying the first device, connected to a second symbol identifying the portion of the network using the modified first identifier.

24. (Previously presented) The computer readable storage medium of claim 21, wherein the portion of the network is a Virtual Local Area Network (VLAN).

25. (Previously presented) The computer readable storage medium of claim 24, wherein the first device is a network switch including a Management Information Base (MIS) configured to store an identifier of the VLAN.

26. (Previously presented) The computer readable storage medium of claim 25, wherein in obtaining the first identifier associated with the portion of the network, the computer program comprises executable instructions for:

using a Simple Network Management Protocol (SNMP) query to obtain the identifier of the VLAN from the MIS as the first identifier.

27. (Previously presented) A system for resolving network connectivity, the system comprising:

means for determining a first identifier associated with a portion of a network in which a device can receive information directed to all devices included within the portion of the network;

means for determining a second identifier associated with the portion of the network based on a domain identifier unique to other portions of the network; and

means for associating the first and second identifiers with the device and the portion of the network,

wherein the means for associating comprises means for modifying the first identifier associated with the portion of the network to include the second identifier.

28. (Canceled).

29. (Previously presented) The system of claim 27, comprising:  
means for presenting an association between the device and the portion of the network based on the first and second identifiers.

30. (Previously presented) The system of claim 27, wherein the device comprises:

means for storing the first identifier.

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**IX. EVIDENCE APPENDIX**

None.

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**X. RELATED PROCEEDINGS APPENDIX**

None.